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Social Technology: An Integrated Strategy and Risk Management Framework

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Abstract

Accounting firms, corporations, and nonprofits use social technology to attract and develop employees, manage business intelligence, innovate business processes, engage clients, customers, and members, and disseminate information to investors and regulators. Despite its benefits, social technology's unique reach and speed create new risks for managers, accountants, and auditors. Based upon prior research and modifications to Kaplan and Norton's (2004) balanced scorecard and the COSO (2017) Enterprise Risk Management framework, we develop an *Integrated Social Technology Strategy and Risk Management Framework* to model risk management during strategy selection and implementation. A field investigation involving three large accounting organizations supports the framework's representativeness for the accounting profession. This research identifies significant benefits, risks, and effective risk management controls for social technology strategies, from governance to monitoring activities. These results suggest this framework's potential usefulness to managers, auditors, consultants, and researchers examining how social technology can provide value to organizations.

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Comments

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Abstract:

Accounting firms, corporations, and nonprofits use social technology to attract and develop employees, manage business intelligence, innovate business processes, engage clients, customers, and members, and disseminate information to investors and regulators. Despite its benefits, social technology's unique reach and speed create new risks for managers, accountants, and auditors. Based upon prior research and modifications to Kaplan and Norton's (2004) Balanced Scorecard and the Committee of Sponsoring Organizations' *Enterprise Risk Management* (2017) framework, we develop an *Integrated Social Technology Strategy and Risk Management Framework* to model risk management during strategy selection and implementation. A field investigation involving three large accounting organizations supports the framework's representativeness for the accounting profession. This research identifies significant benefits, risks, and effective risk management controls for social technology strategies, from governance to monitoring activities. These results suggest this framework's potential usefulness to managers, auditors, consultants, and researchers examining how social technology can provide value to organizations.

Keywords: social technology; risk management; balanced scorecard; COSO *Enterprise Risk Management – Integrated Framework*.

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I. INTRODUCTION

Accounting firms, corporations, nonprofits, and accounting professional associations invest in social technology[1] for a wide variety of organizational strategies and functions. A 2014 survey finds that 75 percent of accountants use social technology to add value to their firms (Roxburgh 2014). Benefits of social technology use include enhancements in brand perceptions, client reach, client experiences, recruiting effectiveness, business intelligence, process innovation efficiencies, and stakeholder relationships. These benefits arise from social technology's low entry barriers, ease of use, real-time communication and collaboration between internal and external parties, and viral sharing capabilities (Golden 2011; Shneiderman et al. 2011: Saxton 2012; Kane et al. 2014; Trinkle et al. 2015; Ernst & Young 2015; Debreceny et al. 2017). Additionally, social technology performance metrics, such as online customer ratings, have been shown to be indicators of a firm's equity value (Luo et al. 2012).

The potential for social technology misuse, however, introduces significant new organizational risks. These risks emerge in part because when content is posted, whether originating internally or externally and regardless of intention, the posting occurs in real time without more traditional, slower review and authorization (ISACA 2010; Deloitte 2013). Damaging comments may quickly and significantly impair relationships with clients, employees, regulators, network partners, vendors, and investors. Exposures that can result from uncontrolled social technology risks include impaired reputation (lost revenues), loss of productivity (excessive costs), loss of intellectual property (competitive disadvantage), viruses and malware infections (business interruption), and poor financial performance

[1]Also known as social media, *social technology* can be defined as "the creation and dissemination of content through social networks using the Internet" (ISACA 2010, 2011) and currently includes platforms such as LinkedIn, YouTube, Twitter, Google Plus, Facebook, Instagram, Snapchat, and blogs (Roxburgh 2012, 2014).

(Deloitte 2013; Protiviti 2014; Brivot et al. 2017). Even abstention from social technology use has been associated with business process inefficiencies, excessive costs, overpricing, theft or destruction of resources, costly regulatory investigations, statutory sanctions, decreased investor support, increased cost of capital, and business failure (Allen et al. 2006; Landsittel and Rittenburg 2010; PwC 2015; Brivot et al. 2017).

Due to the risks described above, social technology risk management has become a priority for accountants and auditors. Auditors are increasingly encouraged to assess the impact of social technology risks on clients' internal control over financial reporting and their own firms' information security, as these violations may result in statutory sanctions (Deloitte 2012; Ernst & Young 2012; Larcker et al. 2012). Protiviti's (2014) survey of 600 internal audit professionals reported that evaluations of their clients' social technology risks are now included in their audit plans, while Deloitte's (2014) survey found that 75 percent of internal auditors surveyed ranked social technology risks as moderate to high for their companies as well as their outsourcing clients. Further, Deloitte's study found that while many internal employee-caused risks may be preventatively controlled, mitigated, or avoided by enforcing strict codes of conduct and training employees to follow best practice authorization policies and required procedures, risks created by external party postings may only be identified with downstream detective controls after public exposure has occurred, and only potentially mitigated with immediate corrective controls.

Neither the Balanced Scorecard (BSC) (Kaplan and Norton 1996), a leading strategy planning framework, nor risk management frameworks such as the Committee of Sponsoring Organizations' (COSO) Internal Control Framework (Landsittel and Rittenburg 2010; COSO 2013) or COBIT 5 (ISACA 2012) are designed to address the unique challenges and risks presented by newer developments such as social technology (Geerts et al. 2013). The collaborative content creation of social technology by individuals within and outside the

organization differentiates social technology from many prior technologies. While frameworks such as the BSC may guide managers on social technology strategy implementation, they typically do not consider the real-time human communication risks and the internal and external human communication risk factors that are significant when comparing social technology to traditional internally-facing computing technologies. Also, the majority of traditional information technology (IT) risk management frameworks generally concentrate on internal platform and operation vulnerabilities and do not include organizations' governance risk attitudes, delegation of communication authorization, communication compliance testing, or an acknowledgement that social technology strategy choices may result in material risk (Akresh 2010; Kerr and Murphy 2013; Geerts et al. 2013).

The 2017 COSO Enterprise Risk Management (ERM) framework, however, evaluates risk management from a variety of stakeholder perspectives and, like the BSC, positions risk management within the lens of an organization's performance where strategy-related decision-making aligns resources with the organization's mission and vision. The 2017 COSO ERM has the potential to incrementally inform social technology risk management over the other risk management frameworks and BSC-enhanced models because it specifically directs managers and employees to consider both the human communication and IT elements in the risk categories of organizational governance attitudes and culture, strategy objective-setting, execution and performance, and information, communication, and reporting processes.[2] To illustrate, an organization's governance risk attitudes regarding U.S. Securities Exchange and Commission (SEC) regulation compliance

[2] Ernst & Young's "risk-enhanced" BSC model directs managers to identify a key risk for each BSC key performance indicator, without providing guidance on the range of risks that may need to be considered (Ernst & Young 2017). ISACA's enhanced BSC model integrates the traditional information technology (IT) risk management steps of identifying IT objectives, IT risks, and IT controls with IT performance metrics embedded into the BSC, without considering the layers of risk management associated with the internal and external human risks of social technology (Kapur 2010).

may very well impact its social technology strategy choices about whether to make any financial announcements over LinkedIn or Facebook, how to make these announcements, and how to monitor reactions to such announcements.

Therefore, this research develops a new two-stage *Integrated Social Technology Strategy and Risk Management Framework* that represents how managers in accounting organizations conduct comprehensive and integrated social technology strategy risk management. This framework is based on modifications of Kaplan and Norton's BSC (1996) and the Enterprise Risk Management framework (COSO 2017). The *Integrated Framework* proposes that managers first perform a comprehensive risk assessment when selecting social technology. After strategy selection authorization occurs, risk management is integrated with social technology strategy planning and implementation using traditional BSC processes. This new *Integrated Framework* models social technology investments by integrating comprehensive risk management considerations within organizations' social technology risk-related decisions regarding governance and culture, social technology strategy and objective-setting, social technology performance metrics and targets, and their choice of risk responses while continually obtaining, monitoring, and communicating strategy performance and risk management information.

To provide support for this *Integrated Framework*, we conduct an exploratory field investigation of three large accounting organizations[3]. We find that social technology risk management is integrated in strategy processes and occurs in two stages. First, managers conduct a comprehensive social technology risk management assessment during their strategy selection process. For each social technology strategy considered, managers in accounting organizations frame and perform a risk-benefit analysis through the lens of only

[3] Several other studies use exploratory field investigation methodologies with small sample sizes (e.g., Tracy 2010; Janvrin and No 2012; Gray 2016; Cram and Gallupe 2016).

one BSC perspective, as determined by the primary contextual target of the strategy. Second, approved strategies are implemented in processes that mirror the steps of the traditional BSC mapping framework. Managers first consider what human capital, informational, and technology resources they will need for the social technology strategy (learning and growth perspective), then design the new or changed business processes they will need (internal process perspective) to measure changes in client engagement and satisfaction (customer perspective), and improvements in financial results of operations (financial perspective). Further, because social technology use engages external parties, an external focus is added to perspectives that previously only had an internal focus in more traditional BSC strategy contexts.

This research is important as the *Integrated Social Technology and Risk Management Framework* represents a holistic approach that reflects both the nature of social technology investments and the relationship between business activity risks and the value of accounting information (Lundqvist 2015). An integrated perspective may also help auditors and advisory professionals to encourage senior management and boards of directors to recognize the governance implications of social technology risk management within their organizations and learn how their organizations are addressing social technology benefits and risks (Saxton 2012; Saunders 2014). Likewise, this *Framework* can enhance auditors' understanding of the impact of social technology risks on their clients' internal controls over financial reporting, and in developing social technology-related auditing guidelines and plans (Allen et al. 2006, ISACA 2011; Deloitte 2012; Ernst & Young 2012). Further, while several studies examine social technology use (Heinrichs et al. 2011; Scott and Orlikowski 2012; Du and Jiang 2015; Zhou et al. 2015), few examine it from the strategic perspective of a specific profession (Schaupp and Belanger 2014; Suddaby et al. 2015) or integrate social technology risk management considerations into strategy planning. Finally, while prior research has

documented social technology risks, these risks have not been theoretically addressed within a strategic framework for organizational best practices (Demek et al. 2018).

The following section reviews the four BSC strategy perspectives used to organize our review of prior research regarding social technology use, benefits, and risk. Next, we describe our initial framework development and field investigation methodology. The results section presents our findings and final *Integrated Social Technology and Risk Management Framework*. The concluding section summarizes our research, discusses its contributions and limitations, and suggests future research questions.

II. BENEFITS AND RISKS OF SOCIAL TECHNOLOGY

This section uses the four BSC perspectives (Kaplan and Norton 1995, 1996, 2000, 2004) to organize prior research findings regarding social technology benefits and risks. The BSC, a leading strategy communication and performance management tool that encourages different employee teams to work together on strategy objectives, has been supported in a wide variety of business contexts. It assists management in translating vision and communicating goals, planning needed strategy resources and processes, and reviewing results for feedback and learning (Kaplan 2006). The BSC has been found to effectively capture how managers strategically select and successfully implement enterprise resource planning software, and may best represent social technology strategy planning (Busco and Quattrone 2015; Appelbaum et al. 2017).

<< Insert Figure 1 >>

The traditional BSC represents sequential strategy steps through the four perspectives shown in Figure 1. Starting at the bottom with the learning and growth perspective, managers must acquire, recruit, or develop the employee, technology, and information capacities needed to gain the knowledge necessary to be able to effectively use social technology to achieve desired innovations and results. Next, in the internal process perspective, newly

controlled processes and procedures are adopted to create new efficiencies and to control for risks at all levels within the organization. The effectiveness of new strategies is typically modeled in the accounting profession as improving service quality, client satisfaction and number of engagements in the customer perspective. Success in each of these efforts should result in measurably improved financial performance which is captured in the financial perspective (Kaplan and Norton 1996, 2000, 2001, 2004). Strategic performance objectives, metrics, and targets are typically determined for each perspective's initiatives, so their individual contributions can be measured with respect to a strategy's overall success.

Learning and Growth Perspective Benefits and Risks

Learning and growth are the essential foundations for organizations to provide strategic value from their human capital (Kaplan and Norton, 2001, 2004). Social technology has become a strategic element for human capital optimization (Afuah and Tucci 2012; Meister 2012, 2013)[4]. Relevant research documents many improvements in employee knowledge sharing, creativity, problem solving, and innovation (Eschenbrenner et al. 2015; Schaupp and Belanger 2014). Social technology use has been found to attract, engage, develop, and retain employees, increase organizational learning, build organizational culture, and optimize brand and strategy alignments with external partners (Doherty 2010; Henderson and Bowley 2010; Caers and Castelyns 2011; Madia 2011; Bersin 2013; Eschenbrenner et al. 2015).

Accountants in auditing, advisory, tax, and private practice routinely research potential future employees on major search engines, such as Twitter, LinkedIn, and Klout, and engage potential employees in pre-contract conversations with their future mentors as

[4] Employees use an ever-changing variety of social technology options, such wiki discussion boards, Google Drive Docs, Circles, LinkedIn groups, Dropbox shared documents, closed Facebook sites, customized social networking sites, and Twitter. While some BSC models consider human resources as a part of the internal process perspective, our discussion presents the social technology-related human resource benefits and risks in the learning and growth perspective, which is more consistent with the social technology research literature.

they consider their career choices (KPMG 2013; Suddaby et al. 2015). Professionals view posted information about their employability as a type of professional currency. Moreover, managers are now measuring "return on influence" as the value employees provide their organizations directly from their social technology use (Schaefer 2012; Bersin 2013; Pew Research 2014).

The same characteristics of social technology that can lead to significant benefits can also cause risk when misused. Low barriers to entry, ease of use, outside party participation, and blurring of employees' work and personal lives all magnify the impact of social technology's strategic, organizational, compliance, and reputational risks in the learning and growth perspective (Deloitte 2013; Protiviti 2014; Brivot et al. 2017; Krumwiede 2017). Common risks to the objective of creating competitive advantage include failing to recruit talent in areas of core competencies, failing to nurture a culture of innovation, and failing to build networks of high quality expertise partners. Employee-caused leaks of currently and previously considered confidential information (e.g., client contacts and issues), both internal and external, and whether intentional or unintentional, are also current social technology risks (Walsh 2013; Trinkle et al. 2014; Munnukka and Jarvi 2014). Finally, insufficient analysis of human resource-related big data is also documented as a social technology risk, resulting in missed incidences, overworked teams and costly employee churn (Bersin 2013).

Internal Process Perspective Benefits and Risks

Strategic improvements to internal processes should possess a cross-organizational value chain focus (Kaplan and Norton 1996, 2001). Continuous business process improvement is critical when emerging technologies, markets, and providers of resources and skills require constant reevaluation of opportunities and risks. Social technology has been found to enhance both an organization's interdependent business processes and internal innovation efforts (Eschenbrenner et al. 2014; Schaupp and Belanger 2014). The professional

services sector has reported that collaboration gains and time reductions in information and expertise searching account for more than 90 percent of the incremental value created by social technology (McKinsey 2012). Social technology also can highlight new opportunities, perceptions, and knowledge such as unanticipated changes in demand, performance gaps, and process weaknesses (Drucker 2007; Picazo-Vela et al. 2012). Gamification, one example of workplace use of social technology, adds elements of gameplay to train and rate employees or test possible scenarios, resulting in increased capacity, better risk management, and stronger stakeholder relationships (Porter 2001; Beasley et al. 2006; Gartner 2014; Baxter et al. 2016).

All social technology related risks are evaluated and managed within the internal process perspective. These risks are pervasive and can result from unresolved issues in governance, culture, and leadership, from weak strategy identification and objective setting processes, from failing to or incorrectly measuring strategy incidents and performance, and from insufficient monitoring and reporting of results for feedback learning. Examples of social technology risks include missed process reengineering opportunities and inconsistent communication protocols, often from inconsistent, unclear, or absent values standards. The absence of a BSC strategy map or a written code of social technology conduct may lead to inappropriate or counterproductive employee use, which researchers now refer to as “time risk” (Khan et al. 2014). Finally, a lack of familiarity with or training for social technology use by executive-level managers, whether for culture building or communication purposes within the organization, can also hinder anticipated process performance improvements, damage younger employee experiences with the organization, and cause missed opportunities for innovation and growth (Percy 2013; Trinkle et al. 2014).

Customer Perspective Benefits and Risks

Social technology investments increase the quality and range of expertise and services that accounting organizations can offer to clients (Suddaby et al. 2015). Their low entry barriers, rapid scalability, and high communication speed result in better client reach and engagement, collaboration, and communication with business partners (Kane et al. 2014; PwC 2015). Social technology also allows managers to discover additional avenues to reach new and existing clients and customers (Rishika et al. 2013; Eschenbrenner et al. 2015; Schaupp and Belanger 2014; O'Leary 2016). Further, social technology can effectively be used for *owned media*, where organizations directly design or purchase media exposure, such as online advertising, a corporate Facebook page, or postings to a Twitter account. It is also well suited for *earned media*, which is defined as unpaid publicity from external parties who post on public or restricted social technology platforms, such as news reports or fan-made postings on Facebook or Yelp. Social technology's low cost, low latency, and speedy dissemination of ideas make it fertile ground for improving customer perceptions of products and services (Culnan et al. 2010; Stephen and Galak 2012; Xie and Lee 2015).

Social technology risks within the customer perspective include viral external and internal attacks that diminish brand and reputation, failure to generate earned media or reach strategic goals, and violations of marketing and client relationships (Eschenbrenner et al. 2014; Schaupp and Belanger 2014). Undesired postings could indicate a loss of control of the online dialogue, creating further risk that comments could be misinterpreted (AAP 2013; Hildebrand et al. 2013; Nickless 2013; Salek 2013a, 2013b; Smith 2013; Smith and Salek 2013). In addition to externally initiated risks, internal executives and employees alike may also cause unintentional and intentional harm to a firm's reputation by posting false or negative information about an organization's products and services, increasing brand and disclosure risks (Brivot, Gendron, and Guénin 2017). The fact that social technology risks

result from both internal and external sources may differentiate social technology BSC applications from traditional views of the BSC.

Financial Perspective Benefits and Risks

Regulators are already noticing that social technology's benefits for financial reporting to stakeholders occur because communication is faster and cheaper, and because it may reach a different audience than traditional media (Prokofieva 2015; Brown et al. 2017; Elliott et al. 2017; Snow and Rasso 2017). Social technology's speed increases stakeholder perceptions of intimacy, engagement, trust, transparency, and collaboration. The SEC recently issued guidance for companies using social technology as a primary communication method, requiring that companies notify investors in advance that social technology will be used for this purpose (SEC 2013a). For example, auditors' content contributions to a blog stream may explain the new FASB and IASB ASC 606 standard for revenue recognition from lease contracts. The auditor's participation in the blog may increase management's understanding of financial statement and ratio impacts, help manage possible investor reactions, and increase blog readers' perceptions of the auditors' expertise (Culnan et al. 2010; Hanna et al. 2011; Aggarwal and Singh 2013; KPMG 2013; Khan et al. 2014; Trinkle et al. 2015; COSO 2017; Bagnoli and Watts 2017; Bartov et al. 2017).

Research has also found that tweet sentiment is associated with stock returns and trading volume. Twitter users who provide consistent, reliable advice tend to be retweeted at a higher rate, creating a quasi-market-based, speedy information assurance process (Sprenger et al. 2014). For example, companies such as StockTwits, which share posts from real investors and trading experts about specific stocks, are gaining popularity with capital market participants (Rose 2013). In addition, market information providers are now building company tweets into their financial data terminals (Chozick and Pelroth 2013), increasing the speed and breadth of this dissemination and forcing regulators to confront its implications for

market operations. Bukovina (2016) finds that social technology data, particularly sentiment data analysis, is especially useful in explaining the actions of retail investors who must act with more tightly bounded rationality than their institutional counterparts. The behavior of smaller retail investors will likely become increasingly important to financial market researchers as more companies publish financial results on social technology and new technological developments democratize stock purchases, decreasing costs and increasing access to capital markets information and opportunities. Fraudulent reporting risks on social media are increased because of the potential new market return incentives.

Social technology can also magnify compliance risks (Bagnoli and Watts 2017). For example, after Netflix CEO Reed Hastings used his personal Facebook account to reveal company performance information, the SEC issued new guidance regarding the use of social technology to disclose financial information (Dixon 2013; SEC 2013b). In a related incident, Whitehaven Mining was a victim of fraudulent social technology posts that caused an AU$300 million drop in market capitalization (ASIC 2013; Shanahan 2013), highlighting market participants' willingness to make trading decisions based on unverified (but timely) information (Chozick and Perlroth 2013).

III. INITIAL FRAMEWORK DEVELOPMENT AND FIELD INVESTIGATION METHODOLOGY

While many significant social technology risks and risk management issues ranging from governance to strategy execution to strategy monitoring were identified in the literature, we did not find theory detailing how risk management actually occurs regarding social technology strategies. Therefore, to research social technology strategy and risk management practices within the accounting profession, we first developed an initial integrated model based on this prior research. We then employed an exploratory field investigation methodology similar to other accounting studies (e.g., Hirst and Koonce 1996; Cohen et al.

2002; Beasley et al. 2009; Trompeter and Wright 2010; Hermanson et al. 2012; Griffith et al. 2015; Cram and Gallupe 2016) in order to examine the representational validity of our new framework, as advocated by Cooper and Morgan (2008) and Yin (2008). Our participants were social technology directors from three large accounting organizations. This field investigation methodology allows us to explore actual perceptions of how managers address social technology strategy and risk while providing rich and detailed descriptions of how they manage social technology strategy risks (Creswell 2012; Power and Gendron 2015).

To develop our initial *Integrated Social Technology Strategy and Risk Management Framework,* we used concepts from two leading theoretical frameworks: the BSC (illustrated in Figure 1) and the COSO ERM (2017)[5]. Figure 2 illustrates the 2017 COSO ERM framework.

<< Insert Figure 2 >>

As previously explained, the BSC focuses management on the four drivers of organization strategy success, framing these drivers as sequential perspectives regarding the organization's learning and growth capacity for knowledge, knowledge sharing, and the nurturing of innovation; internal business process efficiencies and controls; client reach and satisfaction; and financial stewardship performance (Kaplan and Norton 2000, 2004). However, the BSC model only implicitly includes risk management considerations within the internal processes perspective. Therefore, we felt we needed to add a stronger risk management framework to augment the BSC treatment of risk management.

Initial discussions with social technology directors at accounting conferences suggested that the new COSO ERM (COSO 2017) better addresses risk management

[5] The COSO ERM (2017) updates to the 2004 COSO *Enterprise Risk Management – Integrated Framework*.

compared to the BSC and to three other leading risk management models alone.[6] This preference was attributed to the COSO ERM's guidelines specifically directing risk management to areas that create social technology risks: (a) governance attitudes and culture; (b) strategy objective-setting; (c) strategy performance; (d) risk review and strategy revisions; and (e) information, communication, and reporting (COSO 2017). Therefore, our initial framework incorporated the COSO ERM strategic risk management elements into the internal process perspective of the BSC as shown in Figure 3.

<< Insert Figure 3 >>

Field Investigation

To support this *Integrated Framework*, we gathered evidence regarding its representational validity using a field investigation methodology. We interviewed three social technology directors, two from large audit firms and one from a large, leading accounting professional organization.[7] We first verified that the organizations were actively using social technology throughout their organizations. Each participant had at least five years of professional accounting experience and at least three years of managing social technology for their organizations. They provided their history of successful social technology strategy implementations as evidence that they were trained to both know their social technology audience and how to reach them in a manner that provides incremental

[6] COSO Internal Control – Integrated Framework (COSO 2013), the Information Systems and Control Association Model of Control Objectives for Information and Related Technology (COBIT) 5 (ISACA 2012) and the COSO Enterprise Risk Management – Integrated Framework (COSO 2004).

[7] We solicited participants through requests to American Accounting Association members and conference presenters, audit partners, university alumni, and advisory board members. Interested parties forwarded our solicitation to their firms' social technology directors. Since we had no prior relationship with these directors, the possibility of any conflict of interest or bias from our potential participants is low. Most directors forwarded our research request to their legal departments, receiving the response that social technology decisions and their related risk management were considered confidential competitive intellectual property and they would not be participating in our study. These legal department responses provide indirect evidence that social technology investment decisions are considered significant and strategic secrets in most accounting organizations.

firm value. We developed standard open-ended questions to ensure consistent interviews that encouraged sharing of participants' thought processes, while restricting the number of questions so that each interview would not take more than 45 minutes.[8] Since we were interested in participants' responses to our new *Integrated Framework*, we emailed graphic representations of the initial framework and our questions to the participants shortly before the interviews, inviting them to consider whether or not the framework matched how their organizations made social technology strategy selections and implementations. Our planned interview questions are provided in Appendix B.

Our conference call interviews used a semi-structured format with at least two authors on each call. After introductions, we explained our research purpose and reminded the social technology directors that their identities would be held in strict confidence. We asked open-ended elevating and funneling inquiries regarding how their organizations adopt and implement social technology and how they identified and managed social technology risks, both generally and specific to the components of our model. We asked adjoining and clarifying questions to confirm what we had heard (Pohlmann and Neethy 2015)[9]. We noted whenever a participant's response described an important objective, strategy, or risk that had been mentioned in prior social technology research. Finally, we asked the participants whether this framework would be useful for conducting audits or performing advisory services.

Each interview was digitally recorded and at least two authors took detailed notes. Before the following interview, each author transcribed his/her notes, confidentially labeling

[8] Our field investigation processes were approved by our Institution Review Boards before commencing this research.

[9]Elevating questions are best for new discoveries when the view of the problem is wide, and funneling questioning is best for discovery when the view of the problem is narrow. Adjoining questioning is best for confirming or affirming what has already been learned when the view of the problem is wide, and clarifying questioning is best when affirming more narrow aspects of what has been previously learned (Pohlmann and Neethy 2015).

the data sources as Directors A, B, and C. The notes were summarized by key points for our analysis of framework fit. The notes and summaries were then compared to the original transcripts and modified (if needed) by the other authors to ensure that the summarized data were complete, faithful, and unbiased representations of the field investigation responses. Finally, we reorganized the summarized findings by the variables in the *Integrated Social Technology Strategy and Risk Management Framework* to determine if our framework's perspective and risk management components held across our participants' responses.

IV. RESULTS

The results of our exploratory field investigation provide support for an integrated strategy and risk management approach for social technology investments and confirmed that managers are aware of and are managing the primary risks associated with social technology use. This finding supports prior research asserting that social technology use involves significant risks (Demek et al. 2018). However, the participants' descriptions regarding their social technology strategy processes motivated several modifications to our initial *Integrated Framework.*

The following section presents supporting evidence for a comprehensive risk assessment and integrated risk management framework, and describes how these processes are slightly different from what was described in the initial framework. This section then discusses modifications made to develop the final *Integrated Social Technology Strategy and Risk Management Framework* so that it more fully represents the processes described by these social technology directors. Following this explanation is a summary of interview findings within each of the BSC perspectives and a description of the usefulness of the *Integrated Framework* for auditing and advisory services. The final section summarizes our research's conclusions and limitations, and provides a discussion of future research opportunities which emerged from the field investigation.

Support for an *Integrated Framework*

The social technology directors echoed prior research findings that social technology risk management is a top priority in their organizations (Deloitte 2013; Protiviti 2014; Brivot et al. 2017). These participants were very familiar with both the traditional BSC and COSO's ERM frameworks. They consistently stated that an integrated framework better matches their social technology risk management processes than the single BSC strategy mapping or the COSO ERM model alone. The participants also agreed that the COSO ERM recommendations for strategy execution make sense within the BSC internal processes perspective because clear social technology policies and procedures are critical dimensions of overall social technology implementation and performance, supporting Andreesen and Slemp (2011) and Andreesen et al. (2011).

To explain their support for the integration of the BSC and the COSO ERM elements, the participants described performing a comprehensive risk assessment during social technology strategy selection, and the integration of risk management into social technology strategy implementation planning. Both practices reflect the importance of "tone at the top" to generate strategic success with an internal culture that will attract, develop, and retain skilled employees while holding individuals accountable for their choices regarding delegated social technology strategy responsibilities (Kaplan and Norton 2000, 2004; COSO 2013, 2017). They stated that successful control systems must enable the communication of social technology objectives and risks, expectations, and responsibilities to employees, while also providing necessary information for performance and control effectiveness monitoring, supporting the Bersin (2013) finding that big data analysis regarding social technology use can provide valuable insights.

The participants explained that they considered all five COSO risk areas when selecting social technology recruiting strategies. They also considered these five areas within the internal processes perspective during the strategy implementation stage. For example,

while selecting human capital recruiting strategies within the BSC learning and growth perspective, they consistently stated that they consider brand, governance and culture risks associated with each social technology strategy option. Their descriptions support a wider accountability for each employee's responsibility towards social technology risk management, which is consistent with the COSO ERM's general recommendations for a comprehensive and pervasive attitude towards risk management. This finding also supports COSO's ERM Principles 1-12 which recommend evaluating whether organizational governance and management consider all aspects of risk within their culture and business context, such as whether they specify objectives with sufficient clarity to imbue all employees with a sense of vigilance regarding risk assessment (COSO 2017).

Finally, the participants unanimously preferred the COSO ERM model for social technology strategy risk management over other leading risk management models. When asked to explain further, they explained that the COSO ERM includes a broad risk spectrum spanning governance, strategy setting, strategy execution and performance, and strategy and risk monitoring considerations. This preference is most likely due to their view that social technology is a unique, broad strategic initiative involving both internal and external collaboration and communication content, which differentiates it from other IT investments and related risk management.

Revisions to the Initial Framework to Develop the Final *Integrated Framework*

Our field investigation results motivated two revisions to our initial framework. While the participants unanimously agreed with the intuitive usefulness of the BSC perspectives for capturing when and how they think about social technology risk management, they described their use of the BSC components in a modified two-stage approach rather than the traditional one-stage use. Participants first conduct their social technology strategy selection by performing a comprehensive risk assessment and

incremental cost-benefit analysis within one of the four perspectives, choosing the perspective that most closely relates to the target audience of the social technology strategy. Once a social technology strategy has been authorized, then the participants fully integrate social technology risk management by working through a traditional BSC strategy mapping process during their strategy implementation stage. In this second implementation stage, risk management considerations have been modeled as integrated within the internal processes perspective, consistent with traditional BSC applications. Our final two-stage framework is illustrated in Figure 4.

<< Insert Figure 4 here >>

The left panel of Figure 4 illustrates that managers in accounting organizations frame their strategy selections based on only one BSC perspective rather than flowing sequentially through all four perspectives. They choose the perspective closest in nature to the purpose of the strategy (e.g., learning and growth: to recruit employees, technologies, information in order to gain new business intelligence, capacities, and capabilities; internal processes: to innovate existing or develop new internal processes; customer: to connect with new or existing clients about new or additional services; financial: to communicate financial information). During this first stage, they perform a comprehensive social technology strategy risk assessment and use benefit analyses. If they determine that the expected costs from the risks are less than the expected benefits of the social technology strategy, they will approve and adopt the strategy.

Once they approve a strategy, they move to the second stage for strategy implementation planning, which is depicted on the right panel of Figure 4. This stage uses a more traditional, four-perspective BSC strategy mapping process to guide social technology strategy planning, ideally leading to positive client and financial performance results. Planning begins in the learning and growth perspective with determining necessary human,

information, and IT capital investments and changes. Organizationss will identify objectives for these resources, performance metrics, and targets for those metrics, and then design initiatives needed to accomplish those objectives. Then, they move to the internal process change perspective, where social technology directors or managers consider all operational risk management concerns and related internal control investment choices as integrated within their organizations' business processes, consistent with traditional BSC strategy mapping theory. They next consider the customer perspective, articulating client-facing performance objectives, metrics, targets, and specific initiatives as needed to allow the benefits of the internal changes to flow outward to clients. Finally, managers identify the financial objectives, performance metrics, targets, and initiatives necessary to capture and measure the financial performance improvements from the social technology strategy. Perspective-specific strategy outcome performance metrics and targets are created so that each team can learn how the initiatives from its portion of the social technology strategy contributed to the strategy's overall success.

A second change to the initial framework arose when participants noted that they considered social technology recruiting strategy selection as part of their human capital strategies and decisions within the learning and growth perspective. Further funneling inquiries revealed that organizations' social technology use clearly blurs the inside versus outside boundaries of the organization within the learning and growth perspective, especially when framing new hire recruiting, and perhaps ultimately in all four of the BSC perspectives. Therefore, because social technology involves both internal and external content creation and collaboration, we felt that the solely internal focus of the BSC's learning and growth perspective needed to change to an internal and external focus regarding risk assessment within the learning and growth perspective. As prior research addresses how organizational boundaries challenge accounting and control (Hines, 1988; Meyer, 1979), this result suggests

that social technology strategy may influence a change in how organizational boundaries are defined, extending the reach and the complexity of related risk management.

This phenomenon was specifically documented in our field investigation in the recruiting function for accounting organizations, perhaps because accounting is a human capital-based service profession that sees recruiting as a learning and growth function rather than an internal process. These directors explained that the use of social technology strategies for recruiting purposes adds new external risks that must now be considered, voicing different risk management strategies, controls, and monitoring that they considered during the strategy selection stage.

An illustrative example and strategy map is provided to help clarify the final *Framework.*[10] Assume that an accounting organization is considering using a LinkedIn and Facebook strategy to recruit new employees. Framing their strategy selection stage within the learning and growth perspective, they would estimate costs for all prioritized risks, such as missing fraudulent information on LinkedIn résumés as well as Facebook, governance losses from hiring incompetent employees, selecting unrealistic LinkedIn and Facebook recruiting objectives, job related interaction errors within LinkedIn and Facebook members for jobs, and incomplete monitoring of LinkedIn and Facebook activities. The managers would compare these expected risk-related costs with the expected benefits to decide whether or not

[10] We offer a second example from the internal processes perspective: Consider an audit firm evaluating whether to use social technology to share industry expertise across a firm's internal professional network in order to improve audit quality and timeliness. They would calculate the total expected costs from risks associated with this strategy (such as unclear revenue sharing agreements across professional network members or unexpected quality standard differences), considering risks from governance to monitoring activities. They would compare the total expected cost to the expected benefits, such as incremental expertise, engagement time reductions, and client satisfaction benefits from new professional network collaborations. If the expected benefits are greater than the expected costs, they would approve the strategy and proceed to a strategy implementation stage. The audit firm would then work through a traditional BSC process by first considering the need to hire, engage external parties, or develop social technology expertise within their employees (learning and growth perspective) so that audit processes can be improved by including external expertise (internal process perspective) in order to provide improved audit plans, audit quality, and timeliness for more satisfied clients who tell others of their positive experience, leading to new clients (customer perspective), and greater revenues for that accounting firm (financial perspective).

to recruit using LinkedIn and Facebook. If the expected benefits exceeded the costs, they would authorize an approval of the strategy, select the strategy and move forward to the strategy implementation planning stage. Figure 5 depicts this example strategy selection stage in the left panel.

<< Insert Figure 5 here >>

In the strategy implementation planning stage illustrated on the right panel of Figure 5, managers then consider what learning and growth perspective capital and capacities are needed to be able to use LinkedIn for recruiting (e.g., Do we have current employees with the skills to recruit competitively via LinkedIn? Can we effectively train current employees? Or will we have to hire new employees who possess the needed skills? Do we have the needed LinkedIn and Facebook big data tracking software?). They then formulate their learning and growing objectives from using LinkedIn and Facebook for recruiting, design related performance metrics and targets (e.g., metrics such as number of quality applications received, number of effective new hires, etc.), and define their specific initiatives.

Next, managers move to the internal process perspective where they design internal processes that use LinkedIn and Facebook to ensure efficient and effective recruiting processes with strong controls that minimize all five COSO areas of social technology risks. They create objectives for those new processes, performance metrics, performance targets and specific initiatives. Then managers move to the customer perspective where they set objectives, performance metrics, and targets to measure the client impact of the recruiting improvements, such as improvements in engagement quality, number of engagements, and level of client satisfaction. If needed, they would specify initiatives related to these objectives, metrics, and targets. Finally, they would identify financial perspective objectives, metrics, and targets from their strategy to hire new employees via LinkedIn and Facebook (e.g., increases in market share, revenues, or net income).

Social Technology Objectives, Risks, Metrics, and Controls

Our field investigation provided many insights regarding the many uses of social technology within the accounting profession as well as the specific social technology objectives, risks, and strategy performance metrics for each perspective. The participants also shared their preferred internal controls as perceived from their own internal process perspectives. These results are consistent with prior research documenting the widespread use of social technology in the professional services sector. These findings have been organized by BSC perspective and summarized in Table 1.

<< Insert Table 1 >>

Learning and Growth Perspective

Social technology strategy objectives for the learning and growth perspective range from identifying investments that would support external recruiting goals such as reaching top talent to grow their internal talent pool, to investments that would support internally focused employee development goals such as increasing talent and expertise mobility, and reducing employee churn, supporting the findings of Bersin (2013). Social technology allows accounting organizations to more efficiently form partnerships with university students, accounting firms, corporations, professional associations, and regulatory agencies through the creation of shared content and relationship development experiences. New risks include incorrectly articulating hiring needs, relying on externally provided fraudulent information, and sharing confidential information, as well as more traditional hiring errors. Strategy performance metrics include access and engagement metrics by both potential employees and employees, number of successful new hires, and fulfillment of needed expertise. These learning and growth perspective insights have been summarized at the bottom of Table 1.

Internal Process Perspective

Social technology objectives for the internal process perspective include improved communication, collaboration, and internal process effectiveness and efficiency, often in the form of decreased transaction costs and shorter time to service fulfillment. The *Integrated Framework* models all risk management, including internal controls as residing within this perspective, consistent with the original BSC model. While accounting organizations use extensive detective and corrective controls for risks caused by external party postings which cannot be preventatively controlled, these directors preferred pervasive, preventive controls for internal users so that brands can be built and maintained, as restoring a firm's reputation after an injury was more costly and difficult. They also distinguished between the risks (and related controls) caused by organizational uses of social technology from those caused by employees mentioning organizational content in a personal context, noting that both types of risks need to be considered and controlled. Director C noted, "Partners and managers may use their personal social technology accounts to advocate for our firm. Some tend to post, however, without thinking about the long-term consequences." This result supports the need for clear social technology codes of conduct that apply to all levels of employees, including partners and managers, as the potential for management override of social technology controls is significant.

Critical governance control elements such as modeling of organizational values and providing guidance and discretion about what can or cannot be communicated were consistently cited as essential to avoid both intentional and unintentional misuse of social technology. Strong leadership, extensive training, the development and enforcement of a social technology code of conduct, continual monitoring, and timely incident response processes were held as transparent and effective controls, confirming Walsh's (2013) findings. Frequent password changes, segregation of duties, and implementing ERP human resource modules that capture social technology data and compute related metrics were also

useful controls in the social marketing, collaboration, procurement and revenue cycle arenas alike. In earned media scenarios, the directors recommended only allowing qualified, trained, and authorized personnel to create content. Common monitoring tools include social technology information verification activities, post-project audits, electronic device surveillance software, and follow-up from anonymous hotline tips, consistent with Bersin's (2013) findings.

For example, Director A noted "We train and monitor how to respond, how to be helpful to defuse negative feedback, how to de-escalate, and how to not promise what cannot be delivered nor take responsibility for items for which we are not responsible." Director B likewise stated, "We now spend a lot of time assessing our messaging. We monitor for general misrepresentation." Director C noted,

> "The biggest risk we found was from employees who are not trained social technology people yet who are interact[ing] with external parties. Our control goal is to train everyone now so that we create a cohesive and owned brand by all employees."

These findings support the COSO risk management layers of information and communication and monitoring of social technology uses.

Customer Perspective

Common social technology strategy objectives within the customer perspective include building brands and relationships with existing and potential clients or members. Social technology is used to listen to needs, so that accounting organizations can offer missing services, supplant lower quality services, and share professional network resources. Our participants indicated that their most successful social technology strategies build specific client marketing initiatives as part of a longer-term strategy to build brand awareness, rather than from isolated short-term strategies, a finding consistent with Hoffman and Fodor (2010). They felt that a proper performance evaluation of a multi-pronged, social technology-based customer image effort is a difficult task that requires keen awareness of

changes to the environment, consistent with the environment-driven controls recommended by COSO (2013; 2017).

These strategy directors felt that the quantifiable nature of some social technology participation measures lend themselves to over-measuring the demand side of market participation at the expense or loss of more valuable feedback metrics. Several individual metrics (e.g. likes, followers, comment volume, blog posts, etc.) as well as proprietary indices can be used to better gauge performance and potentially offer avenues toward refinement of customer-oriented strategic performance. Director C explained, "Moving beyond using social technology as a mere marketing tool brings many new added rewards and risks." This director also noted,

> "Our concern here is related to branding. Employees may create their version of the brand, which may water the brand down or even create a competing message. Cohesiveness is more difficult. The bigger the target audience, the bigger the risks."

Director B stated,

> "With social technology, we may misunderstand our audience, send out a confusing message, or an image of the firm that is inauthentic. We watch our competitors' growth in engagement rates and if they go up or down significantly, we go look at the exact content the competitors are using."

Financial Perspective

Within the financial perspective, social technology is used pervasively to share news of financial health and growth with external stakeholders. The accounting firms described great interest in communicating increased firm expertise, client reach and increased wealth as measured by increased revenues and increased profits, while the professional association described metrics more aligned with maximizing and optimizing member services. Director B stated, "Social technology use can impact stakeholder value in accounting firms and stock price for publicly traded firms." This finding supports the SEC's push for regulation of social technology use in financial communications. The directors also indicated that the most

significant social technology risks in this area relate to regulations and compliance. Director C noted,

> "Risks in the financial perspective are equal between regulation/compliance and clarity in branding," going on to explain, "Regulatory and compliance risks occur in service delivery. We need to make sure all information released is accurate, else we have regulatory and compliance problems."

Advising Clients Regarding Social Technology Risks

All three organizations currently offer social technology strategy resources and services to their clients. They consider social technology use risks as part of their audit scope in their evaluation of internal control over financial reporting as they plan their audits. The participants believe that the final *Integrated Framework* would be very useful within these engagements, both as a framework to think about social technology use and because of the questions that the framework helps to generate. Finally, the participants thought the *Integrated Framework* would be consistent with their mission values to provide valuable advice to all clients across many different types of engagements. Director A noted:

> "In accounting and finance, where regulation and compliance has such high importance, social technology issues can be very terrifying. Using this framework with our clients to first determine where their social technology uses and risks are concentrated is a really good idea. This framework is generic enough that no matter who our client is, it allows us to apply the unique applications with these general perspectives. I think it is very useful, very understandable, and can be applied in a variety of sectors."

Director B stated:

> "This framework would be especially helpful for our consulting team to use when assisting clients in understanding social technology issues regarding the governance and culture piece of risk management."

V. CONCLUSION

Social technology is rapidly changing how information is communicated and disseminated both within and without an organization. Social technology use presents several unique challenges, primarily due to its immediacy and broad reach, leading to novel issues of

risk management and accountability (Suddaby et al. 2015). Given accountants' and auditors' roles in executing strategies and disseminating information, this change warrants research that develops theory for social technology investments.

This paper used an exploratory field investigation methodology to identify how accounting organizations perform social technology strategy development and risk management. Our research found that managers in accounting organizations are aware of social technology risks and their significance, and that they seek to manage these risks, consistent with Eckert (2017). We found that risk management occurs during social technology strategy selection and implementation, consistent with Lee and Green (2015).

The data from our field investigation guided the development of an *Integrated Social Technology Strategy and Risk Management Framework* that managers, auditors, consultants, and researchers may use to frame and study social technology strategies and the management of their related risks. Based on prior research, and modifications to the BSC and the COSO ERM (2017) frameworks, our final *Integrated Framework* provides three contributions to social technology theory.

First, the *Integrated Framework* models comprehensive risk assessment as occurring within the social technology strategy selection process, and separately from the integrated risk management processes that occur within the subsequent strategy implementation planning process. The *Integrated Framework* highlights how accounting organizations first frame their social technology strategy selection by performing a comprehensive risk management cost-benefit analysis within any one BSC perspective as determined by the contextual target of the strategy. By integrating COSO ERM elements from governance and leadership levels through strategy execution, incident prevention, control, and response, and monitoring levels into the "best fit" BSC perspective, managers in accounting organizations are more likely to stay focused on their primary objectives when analyzing social technology

strategy alternatives, reducing risk exposure before strategy implementation. Then, once a strategy is selected, our findings document that managers thoroughly integrate risk management into their internal processes before rolling out a social technology strategy. Their methods follow a traditional BSC strategy mapping process which sequentially consider learning and growth, internal process, customer, and financial perspectives for strategy implementation planning. As in a traditional BSC model, all risk management controls are modeled to occur in the internal process perspective of each strategic map.

Second, our findings add a new internal/external risk boundary dimension to the BSC framework, supporting prior research documenting that senior management, boards of directors, and auditors are now seeking guidance on the unique impact and risks of social technology (Deloitte 2012; Ernst & Young 2012; KPMG 2013). We found that managers must now anticipate social technology behaviors by individuals and organizations both inside and outside their traditional boundaries. This finding implies a need for social technology risk management theory to include and respond to these new control boundaries with a wider theoretical lens which includes technical, political, and social dimensions of social technology use. Social technology risk may now be depicted as the output of a process of new "territorializations", in the sense that social technology use continually and actively creates new real-time boundaries of an organization's territories. New social technology risks are made visible in new ways, and accounting and control systems operate differently (Miller & Power 2013). This new internal/external emphasis of "territorialization" affects overall social technology strategy, choice, and risk management (Hilgartner 1992).

Finally, our results found that social technology directors within accounting organizations feel that this *Integrated Framework* can assist assurance professionals in their already documented need to understand the impact of social technology on their clients' internal controls over financial reporting for developing social technology-related auditing

guidelines and plans (Allen et al. 2006; ISACA 2011; Deloitte 2012; Ernst & Young 2012). While prior research has documented social technology risks, these risks have not been theoretically addressed within a strategic framework for organizational best practices (Demek et al. 2018). The *Integrated Framework* adds academic theoretical value for explaining firm behavior and practical grounding for understanding how organizations can address comprehensive risk management while selecting and implementing social technology strategies and investments from governance to monitoring activities. It also helps managers learn how to frame and measure social technology benefits and risks, and to understand the relationship between the risks associated with business activities and the value of accounting information, consistent with Saxton (2012) and Saunders (2014), and supporting Lundqvist (2015).

These results provide support for the *Integrated Framework* and its usefulness when examining the implications of social technology opportunities, benefits, and risks for accounting organizations. The participants indicated that this *Integrated Framework* could also be useful to senior management, social technology directors, internal and external auditors, tax and advisory professionals, and academic researchers who seek to understand how to improve the performance of social technology strategies, and generously shared several research needs from their current practices. Finally, the participants also noted a market opportunity for the accounting profession to offer new social technology risk management assurance services.

There are several limitations regarding the recommendations of this field investigation. First, this work does not address the varying duration of organizational social technology strategies. Organizations can adopt social technology for a wide variety of objectives, some short-lived (e.g., communicating to employees about a current deadline or directing users to a new online resource), and others with longer duration (e.g., fundamental

changes to basic business processes and resource sharing). Future research could differentiate organizational approaches based on intended timespan for each strategy type.

Second, while we provide support for the *Integrated Social Technology Strategy and Risk Management Framework* through a field investigation of three large accounting organizations, additional empirical testing is encouraged to validate its usefulness for other sizes of accounting organizations, different business units within accounting firms, and other industries. While management in any industry is responsible for risk management and internal controls, accounting organizations may be more conservative or risk management-focused than other industries and thus address social technology use differently. While we note our small sample size, we also learned from the large number of rejections we received to our offer to participate in this study. We conclude that as organizations increasingly extract significant value and competitive advantage from their social technology investment and strategy choices, they may be less willing to share their social technology practices with researchers. Thus, different and more indirect research approaches may be needed in future research.

In addition to the noted future research suggestions, many future research questions emerged from framework-related participant comments and from specific examples regarding social technology opportunities, uses, and challenges. The participants stated that they value new research that furthers their understanding of social technology use, adds to the value they receive from social technology use, and may further reduce their related risk exposures. Their comments have been reframed as future research issues in Table 2.

<< Insert Table 2 >>

Researchers may want to examine how social technology choices from the learning and growth perspective are related to levels of organizational innovation. They may want to study whether the socially interactive nature of social technology potentially changes the

focus of each of the four BSC perspectives to "internal and external," how social technology is changing the boundaries of organizations, or if and how these joint internal and external communications impact competitive advantage, intellectual property, security and privacy.

The impact of social technology recruitment practices on human resource risks and costs, or how specific social technology risks affect organizations' technology use policies, are also areas ripe for study. Researchers could test whether traditional access, verification, and authorization controls apply to social technology, and study which factors determine the optimal mix of preventive and detective controls (Cram and Gallupe 2016). Likewise, researchers may want to study what other factors drive social technology strategy choices, given that our subjects explained that the scope of the social technology objective, its timeframe, and number of involved employees were considerations. Director B stated, "[We] approach [risk management] holistically, at three different levels – organizational, team, and individual. Resulting policies, training, etc., are very different depending on the levels involved."

Social technology research that builds knowledge regarding operational best practices is also recommended, with particular focus on the differentiation between short-term versus long-term social technology strategies. Examples include identifying successful short- and long-term social technology strategies for improving customer satisfaction, exploring whether more open disclosure of negative events via social technology improves customer or investor response to positive events, and measuring the effect of customer-initiated social technology postings on a firm's product offerings. Finally, from a financial viewpoint, research opportunities may include better understanding investor trust in social technology-disseminated information as well as the organizational monitoring of financial information, a need that has already been validated by current research (Culnan et al. 2010; Larcker et al. 2012; Saxton 2012; Geerts et al. 2013). In short, the increasingly prevalent use of social

technologies merits future research to better understand the most relevant strategy and risk management variables, fueling the further development of best practice theories.

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TABLE 1
Social Technology Strategy Objectives, Risks, and Controls

Financial Perspective	
Objectives	Communicate financial results quickly and correctly. Communicate and in compliance with regulations. Nurture investor, partner, donor, and regulator relationships.
Risks	Regulatory compliance violations. Confidentiality or authority breaches.
Performance Metrics	Increase in engagements. Increase in revenues. Increase in net income.
Customer Perspective	
Objectives	Build brand through communications and discussion participation. Communicate expertise. Communicate menu of services. Exceed client expectations in services. Inspire loyalty. Build referrals.
Risks	False content. Inconsistent treatment between clients or between employees providing the content. Inconsistent response times. Unanticipated reactions.
Performance Metrics	Increase in new clients/members. Increase in engagements. Increase in services offered. Increase in client/member satisfaction.
Internal Process Perspective	
Objectives	Improve communications and collaborations. Increase innovation success. Maximize organizational economic value by improving operational effectiveness and efficiencies through sharing knowledge and resources. Create quality and sustainable partnerships.
Risks	Miscommunications. Collaboration breakdowns. Loss of confidentiality. Failed processes. Decreased performance. Increased errors.
COSO ERM (2017) Controls	**Governance and Culture**: Consistent examples of leadership values. Individual accountability. Social technology codes of conduct. **Strategy and Objective Setting**: Set cost/benefit analysis process. Thorough research and documented review. Clear communication of decisions and timeframe. **Strategy Execution**: Access controls, authorized processes by trained individuals. **Information and Communication**: Passwords, data analytics, fast response time. **Risk Performance Monitoring**: Continual surveillance. Verification. Follow-ups.
Performance Metrics	Decreased costs. Decreased audit or advisory engagement time. Increased engagement quality. Increased views and engagement on shared content.
Learning & Growth Perspective	
Objectives	Recruiting: Attract and hire highest quality interns, staff, managers, advisory consultants, and expertise-providing or service-providing partners. Business Intelligence: Develop knowledge sharing channels and content. Develop a collaborative culture. Increase training, development, mentoring, and coaching of employees.
Risks	Incorrectly understanding or articulating hiring needs. Relying on externally provided fraudulent information. Sharing confidential information. Traditional hiring errors.
Performance Metrics	Access and engagement metrics with social technology content. Number of successful new hires. Fulfillment of needed expertise.

TABLE 2
Social Technology Risk Management Research Opportunities by *Integrated Social Technology Strategy and Risk Management Framework* Perspectives

Learning and Growth

- Are social technology choices linked to an overall or specific innovation strategy?
- What factors (organizational, industry, strategy, competition, etc.) drive the adoption of different social technology platforms for innovation?
- Are organizations aware of the innovation risks and opportunities that come from social technology?
- Are organizations changing their technology use policies to recognize the risks of using social technology to enhance innovation? Are these risks evaluated differently?
- What mix of controls, information and communication, and monitoring best address innovation-related social technology use risks?
- How has the recruitment process changed with the use of social technology? Has it shifted from casting a net to actively seeking out applicants?
- How can social technology use enhance employee innovation?

Internal Processes

- What challenges emerge when defining boundaries between personal and organizational social technology use?
- How do traditional access, verification, authorization, and other controls for internal systems apply to a social technology setting?
- What organizational factors determine the optimal mix between preventive, detective, and corrective controls in the social technology environment?

Customers

- What are current best practices for social technology use when interacting with customers and other stakeholders?
- What are successful short term and long term social technology strategies for improving customer and other stakeholder satisfaction?
- Does the conflicting relationship between the effects of earned and owned social media hold across different industry types?
- To what extent does more open disclosure of negative events via social technology improve customer response to positive events?
- Under what conditions can customer-initiated social technology movements materially affect a firm's product offerings?
- What customer satisfaction metrics are effective in measuring the success of social technology investments?

Financial

- How is social technology changing interactions between organizations and investors?
- Do investors view information provided via social technology as inherently credible? Should this information be audited?
- Are organizations as concerned about the verifiability of social technology announcements as they are about information provided in SEC filings?
- Do organizations promote social technology as an information source in their traditional financial reports? If so, how do organizations monitor the impact of social technology disclosure?

FIGURE 1
Traditional Balanced Scorecard Model

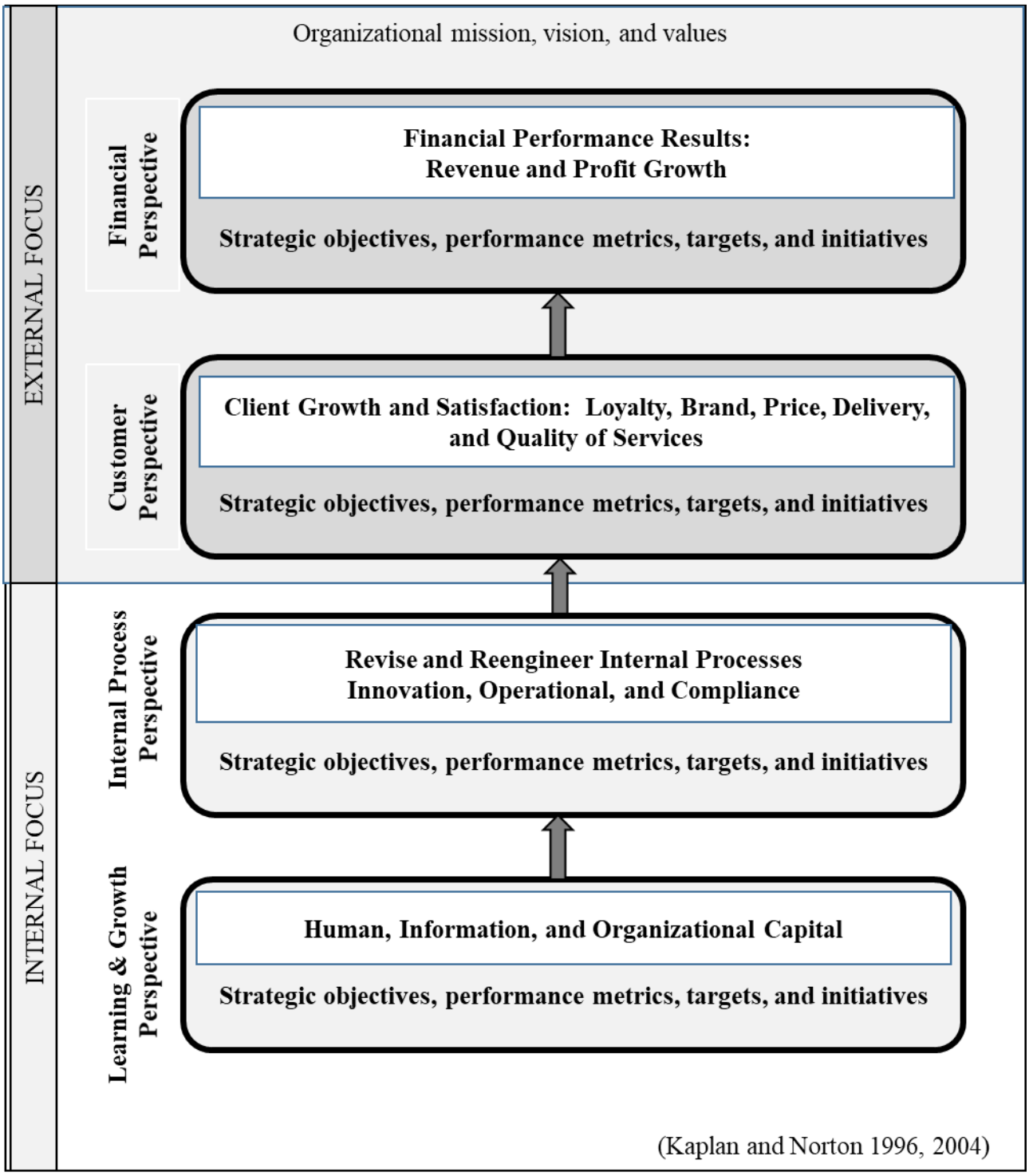


FIGURE 2
COSO (2017) *Enterprise Risk Management – Integrated Framework* [a]

Governance and Culture | Strategy and Objective-Setting | Performance | Review and Revision | Information, Communication, and Reporting

Governance and Culture: Gov&Cult

1. Board oversight
2. Operating Structures
3. Define desired culture
4. Commitment to core values
5. Attract. Develop, and Retain Capable Individuals

Strategy and Objective Setting: Strat&Obj

6. Analyze business context
7. Define risk appetite
8. Evaluate alternative strategies
9. Formulate business objectives

Performance Execution: Performance

10. Identify risks
11. Assess risk severity
12. Prioritize risks
13. Implement risk response
14. Develop risk portfolio view

Review and Revision: Rev&Revise

15. Assess substantial change
16. Review risk and performance
17. Pursue improvement in Enterprise Risk Management

Information, Communication, and Reporting: Info&Rpt

18. Leverage information and technology
19. Communicate risk information
20. Report on risk, culture and performance

[a] Adapted from COSO ERM (2017).

FIGURE 3
Initial *Integrated Social Technology Strategy and Risk management Framework*

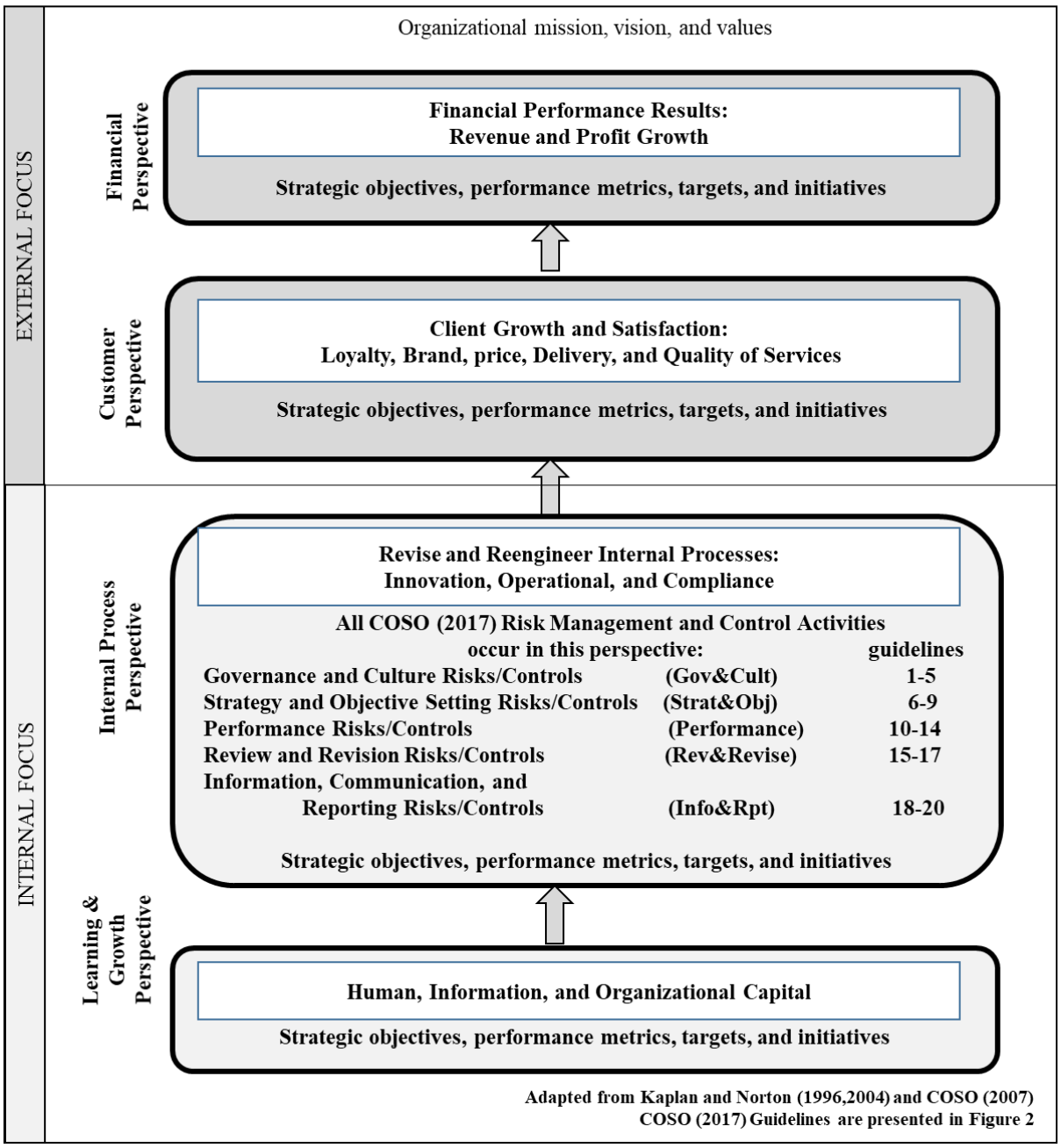
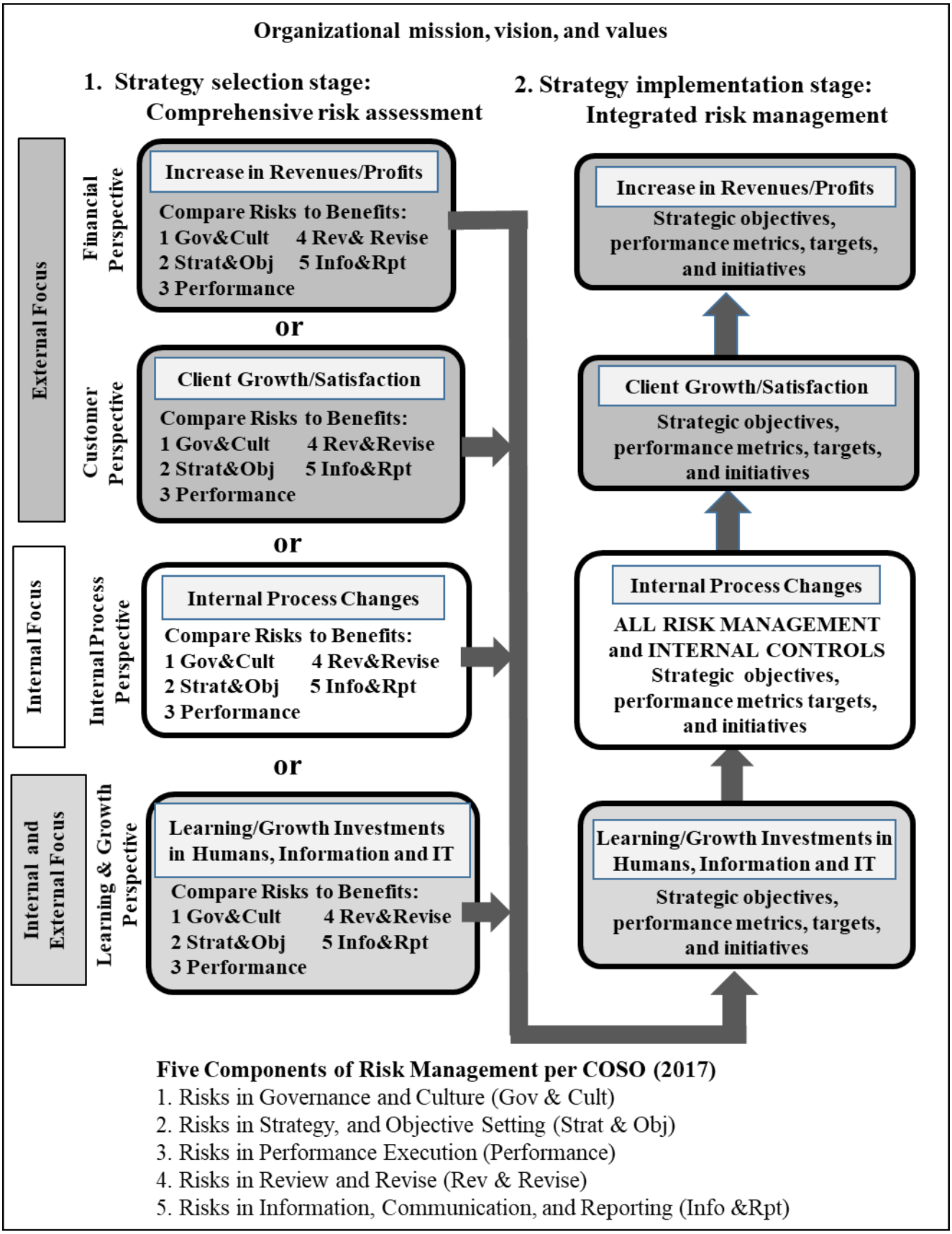
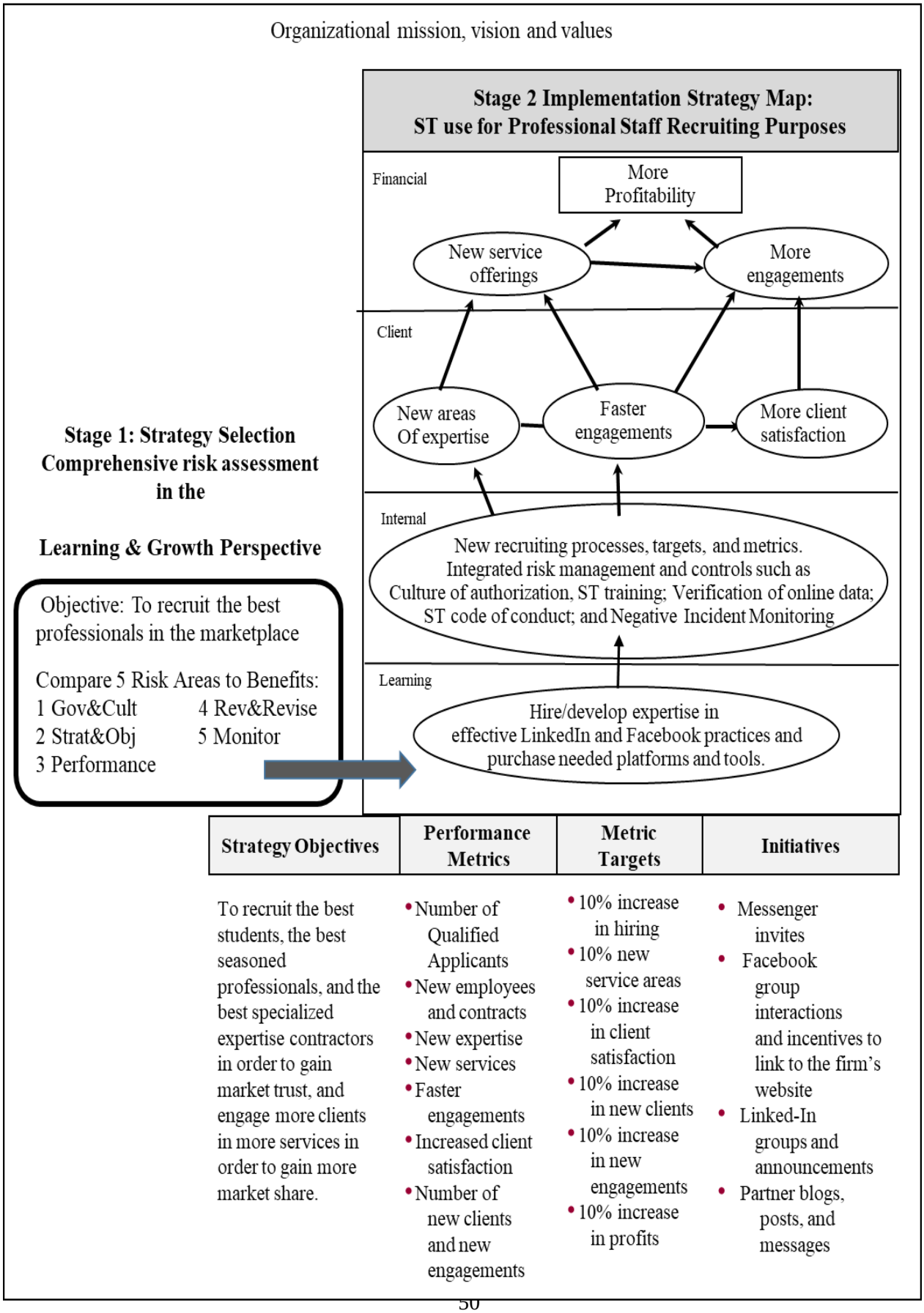


FIGURE 4
The Integrated Social Technology Strategy and Risk Management



Adapted from Kaplan and Norton (1996, 2004) and COSO (2007)

FIGURE 5
Example of the *Integrated Framework* Applied to the Social Technology Strategy of Using LinkedIn and Facebook for Recruiting Professional Staff



APPENDIX A
Field Investigation Questions

Social Technology Use and Risks

General

- How does your organization use social technology?
- What risks has your organization encountered due to social technology use?

Specific Perspectives

- Would you please describe specific examples of your typical activities, interactions, and risks involving social technology use for
    - building and leveraging your organization's capacity and capability for learning and growth?
    - internal business process improvements and efficiencies?
    - improving customer or client relationship, experiences, and satisfaction?
    - communicating financial and stewardship performance?

Current Social Technology Risk Management Approach

General

- Please describe how your organization manages social technology risks.
- Does your organization use a framework for managing your social technology risks?

Specific Social Technology Risk Management Levels

- How would you describe your organization thinks about risk management at these levels:
    - governing and leadership?
    - objectives and strategy setting?
    - strategy execution?
    - internal information sharing?
    - monitoring of risks?

Evaluation of Integrated Framework

- Do you believe that our *Integrated Strategy and Risk Management Framework* represents how your organization considers social technology strategy and risk management? Specifically, why or why not?
- Do you believe that this framework could assist your organization in your social technology strategy and risk management? Specifically, why or why not? If so, could you describe how it could be used?
- Do you have any other feedback regarding our framework or ideas about how this framework can be improved?

Advising Clients Regarding Social Technology Risks

- How do you currently advise clients regarding social technology risks and risk management?
- Do you believe that this framework can assist your organization in helping clients manage their social technology strategies and risks? Specifically, why or why not? Can you provide specific examples of how you might use the framework?
- Would you suggest any changes to this framework for providing advice to clients?